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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,152	07/02/2001	David R. Brown	2119-0160P	9526
40575	7590	04/19/2006		
OLDS, MAIER & RICHARDSON, PLLC PO BOX 20245 ALEXANDRIA, VA 22320-1245			EXAMINER CHACKO DAVIS, DABORAH	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

CM

Office Action Summary	Application No.		Applicant(s)	
	09/895,152		BROWN ET AL.	
	Examiner		Art Unit	
	Daborah Chacko-Davis		1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-25, 27, 28 and 36-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-25, 27-28, 36-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6-25, 27-28, and 36-42, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 6,071,652 (Feldman et al).

Feldman, in the abstract, in col 4, lines 25-58, discloses a method of forming a gray level mask comprising performing a direct writing with a laser on a photosensitive layer(photoresist layer), wherein each pass is offset such the a single pass is performed in a single portion (single path, no two passes write along the same path, see reference 8a of figure 1b), developing the exposed photosensitive layer, and removing the remaining photoresist pattern after etching. Feldman, in col 5, lines 5-12, and in col 8, lines 46-47, discloses that the gray level mask formation method has a better control on sidewall sharpness and depth (no stitching errors), and also reduces alignment errors (reduction of non-uniformity) (claims 1, 3, 6-8, 22-24, 28, 36, 38, 40-41). Feldman, in col 4, lines 42-45, discloses etching the photosensitive material (claims 2, and 27). Feldman, in col 5, lines 48-55, discloses that at least 8 passes are performed (8 levels formed, pattern written) (claims 4, 11, 21, 25, 37). Feldman, in col 4, lines 41-45,

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discloses that the pattern in the photoresist layer is transferred to the substrate layer by etching (claim 9). Feldman, in col 4, lines 38-41, discloses that a mask can be used to perform an exposure (pass) (claim 10). Feldman, in the abstract, and in col 8, lines 7-22, discloses that the photoresist layer is heated to about 115°C so as to cause a reflow in the photoresist (melting) to eliminate roughness, wherein the reflow (melting of the photoresist) is performed to eliminate obvious discontinuities on the surface of the photoresist (claims 12-17, 39, and 42). Feldman, in col 2, lines 43-49, in col 3, lines 20-23, and lines 32-40, and in col 4, lines 45-48, discloses that photoresist can be exposed (to form a pattern) using gray scale lithography, wherein the gray scale lithography can be performed using a mask from half-toning or using a mask having a variable amplitude transmission with continuous level phase transmission (modulated) (claims 18-20).

Response to Arguments

3. Applicant's arguments filed February 7, 2006, have been fully considered but they are not persuasive. The 102 rejection made in the previous office action is maintained.

A) Applicants argue that Feldman teaches to write multiple passes along the same path.

Feldman, in col 3, lines 24-28, discloses using a laser beam to direct write on a photoresist layer, i.e., the laser directs the beam to different predetermined positions via a single pass to perform an exposure.

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B) Applicants argue that Feldman does not disclose melting a portion of the photosensitive material so as to reduce general roughness error, and that the general roughness error is in the order of 10 microns.

Feldman, teaches to reflow the photoresist by heating the photoresist to eliminate obvious discontinuities i.e., reducing general roughness error. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., general roughness error is typically in the order of 10 microns) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

MD

April 13, 2006.


JOHN A. MCPHERSON
PRIMARY EXAMINER